

**GEOGRAPHICAL CONCENTRATION OF MANUFACTURING
INDUSTRIES IN JAVA REGION, INDONESIA**

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DEDICATIONS

To My Father, Imam Bukhori, and *My Mother*, Siti Indriyah, S.Ag

To My Late Father in Law, Alm. Drh. M. Ichsan Thohir, and

My Mother in Law, Indriyati

To My Wife, Nunung Fatimah, SE., and

My Childrens, Callysta Az-Zahra Wahyudi and Maheswara Zhafif Wahyudi

And

To My Brothers and Sisters:

Aries Dwi Siswanto, ST., MT. and Lilik Machsunatin, SAB.,

Eril Rudi Cahyono, ST. and Megi Amalia, SE., MM

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Desy Nurwijayanti

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Glossary

Agglomeration economies: The spatial concentration of economic activity in urban areas.

Augmented Dickey-Fuller Test: A test for a unit root that includes lagged changes of the variable as regressors.

Concentration: A specific economic activity is reflects the distribution of its regional shares.

Economic growth: Typically refers to an increase in a country's output of goods and services. It is usually measured by changes in real GDP

Fixed Effect Model: The unobserved effects panel data model where the unobserved effect is allowed to be arbitrarily correlated with the explanatory variables in each time period.

Gross domestic product: The total income earned domestically, including the income earned by foreign-owned factors of production; the total expenditure on domestically produced goods and services.

Herfindahl Index: A measure of the size of firms relative to the industry and an indicator of the amount of competition among the firms in the industry.

Localization: The degree to which an industry's economic activity takes place in one or a small number of geographical areas.

Location Quotient Index: The level of relative advantage of a sector in one region compared with other region.

Manufacturing industry: Refers to those industries which involve in the manufacturing and processing of items and indulge in either creation of new commodities or in value addition.

Panel Data: A data set constructed from repeated cross sections over time. With a *balanced* panel, the same units appear in each time period. With an *unbalanced* panel, some units do not appear in each time period, often due to attrition.

Random Effect Model: The unobserved effects panel data model where the unobserved effect is assumed to be uncorrelated with the explanatory variables in each time period.

Specialization: Defined as a distibutional indicator on its industry shares.

Unit Root Process: A highly persistent time series process where the current value equals last period's value, plus a weakly dependent disturbance.

Urbanization: refer to the cost savings associated with producing in a large city, more due to inexpensive intermediate goods and services, extensive knowledge spillovers, and large labor pool.

ABSTRACT

Previous studies on geographical concentration of manufacturing industry in Indonesia demonstrated that many firms were localized in major metropolitan areas as well as in a set of emerging regions. The aim of this study is to complement the findings of the previous studies by exploring whether regional specialization and industrial concentration patterns have changed during the 1998-2007 period. This study further aims to explore the driving forces of industrial concentration in Indonesia's manufacturing industry, particularly for Java region, using 43 three-digit manufacturing industries (SIC151 – SIC293) over the same time period. The contribution analysis, the Theil index, and the location quotient index were employed in the analysis of the location of the manufacturing industry. The Herfindahl-Hirschman and Krugman Dissimilarity indices were used to analyze the regional specialization and concentration. This study used the fixed effect regression model to analyze the relationship between the concentration of the manufacturing industry and economies of scale, wages, labor productivity, labor intensity, urbanization economies, localization economies, and export orientation. The sample of this study consisted of 42 out of 96 regencies in six provinces in Java region. It was found that the distribution of manufacturing industry in Java is geographically scattered. The Theil index shows an increasing trend implying that the disparity of the manufacturing industry within regencies has increased. The inequality between regencies shows a decreasing trend over the period of the study, implying that the manufacturing industry in Java spreads only in several regencies. The location quotient index shows an increasing trend that reveals the economy of some regencies are more dependent on manufacturing and simultaneously it shows that several new manufacturing areas have emerged in Java. Further analysis indicated that economies of scale and wages have a positive and significant effect on the concentration of manufacturing industry, whereas labor productivity, labor intensity, urbanization economies, localization economies, and export orientation have a negative impact on manufacturing concentration.

ABSTRAK

Banyak kajian lalu mengenai kepadatan geografi bagi industri pembuatan di Indonesia telah dilakukan. Hasil kajian menunjukkan bahawa lokasi kawasan perindustrian terletak di kawasan bandar utama dan kawasan perindustrian baru. Menyedari hakikat ini, kajian ini bertujuan untuk melengkapi kajian terdahulu. Oleh itu, pengkaji akan meneliti secara terperinci sama ada pola pengkhususan wilayah dan kawasan tumpuan geografi telah berubah sepanjang tahun 1998 hingga 2007. Selain itu, kajian ini juga bertujuan untuk meneliti faktor penggerak kepada kepadatan geografi dalam tiga-digit industri pembuatan di Indonesia khususnya di wilayah Jawa. Sebanyak 43 buah industri pembuatan (SIC151-SIC293) akan diteliti bagi tempoh yang sama. Dalam kajian ini analisis sumbangan, indeks Theil, dan indeks hasil bahagi lokasi akan digunakan dalam meneliti penempatan kawasan industri pembuatan. Indeks Herfindahl-Hirschman dan Ketaksamaan Krugman akan digunakan dalam menganalisis kepadatan dan pengkhususan industri. Selain itu, kajian ini juga menggunakan model Regresi Kesan Tetap dalam menganalisis perkaitan di antara kepadatan industri pembuatan dengan ekonomi skala, upah, produktiviti buruh, intensiti buruh, ekonomi urbanisasi, ekonomi lokalisasi, dan orientasi eksport. Sampel kajian ini terdiri daripada 42 kabupaten dari 96 kabupaten di dalam enam wilayah di Jawa. Hasil penelitian mendapati bahawa taburan kawasan industri pembuatan di Jawa adalah berselerak secara geografinya. Hal ini dapat diperhatikan dalam Indeks Theil yang menunjukkan satu trend kepincangan taburan kawasan industri pembuatan di dalam kabupaten telah meningkat. Situasi ini membawa kepada ketidakseimbangan kawasan taburan industri pembuatan yang tertumpu kepada beberapa kabupaten sahaja. Sementara itu, indeks hasil bahagi lokasi menunjukkan trend peningkatan ekonomi sesebuah kabupaten disebabkan kepesatan industri pembuatan. Ini telah membawa kepada wujudnya kawasan perindustrian baru di Jawa. Analisis seterusnya menunjukkan ekonomi skala dan upah mempengaruhi secara positif dan signifikan terhadap kepadatan industri pembuatan. Namun, produktiviti buruh, intensiti buruh, ekonomi urbanisasi, ekonomi lokalisasi, dan orientasi eksport menunjukkan kesan negatif terhadap kepadatan industri pembuatan.

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CHAPTER ONE

INTRODUCTION

1.1 Background

Developing countries give special emphasis on the development of manufacturing sector because manufacturing is considered as a leading sector that could encourage the development of other sectors, such as the service and agriculture sectors (Arsyad, 1999). Thus, it is not surprising that the role of the manufacturing is becoming more important in encouraging the development of a country's economy (Arifin, 2003).

In order to accelerate the economic growth rate of a country, the process of transformation in economic activity from the primary sector, which is based on agriculture, to a modern secondary sector, which is based on manufacturing, is believed to be one of the many strategies that can be undertaken by developing countries, particularly for Indonesia. This is reinforced by the realization of long-term economic growth in the developed countries that show these countries prosper because of a high level of industrial sector compared to those that relies on agricultural sector (Arsyad, 1999). For example, Japan, Canada, Germany, United Kingdom, and the United States of America have succeeded in improving their economies through the industrialization processes.

Based on those arguments, Tambunan (2001) concluded that, *first* the economy of developed countries were generally more industrialized than the economies of developing countries; *second*, industrialization was regarded as the

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